

CLIPPEDIMAGE= JP409105789A

PAT-NO: JP409105789A

DOCUMENT-IDENTIFIER: JP 09105789 A

TITLE: PLASMA-OPPOSING MEMBER AND ITS MANUFACTURE

PUBN-DATE: April 22, 1997

INVENTOR-INFORMATION:

NAME

NAKAGAWA, MOROO

CHIBA, AKIO

SUZUKI, YASUTAKA

GOTO, SUMITAKA

JINBO, RYUTARO

NISHIDOU, MASAHIRO

ASSIGNEE-INFORMATION:

NAME

COUNTRY

HITACHI LTD

N/A

JAPAN ATOM ENERGY RES INST

N/A

APPL-NO: JP07264209

APPL-DATE: October 12, 1995

INT-CL_(IPC): G21B001/00

ABSTRACT:

PROBLEM TO BE SOLVED: To provide a plasma opposing member excellent in plasma resistance such as thermal impact resistance or sputtering resistance, and suitable for the use as a surface protecting material for plasma fusion reactor or so-called armor member, particularly, diverter or first wall.

SOLUTION: The plasma-opposing member is formed out of a composite sintered body formed out of carbon **fiber, carbon, and boron carbide, the carbon fiber being oriented in two right-angled directions, wherein a carbon fiber 1 with high heat conductivity** in the direction to conduct heat (direction orthogonal to the paper surface) is substantially linearly oriented, and a carbon fiber 2 with high strength in the other direction is oriented in a corrugated form. Since boron carbide capable of providing a required sputtering resistance is contained in this plasma-opposing member, and the **heat conductivity at room temperature of the carbon fiber oriented in the direction to conduct heat** is 100W/m.K or more, a plasma-opposing member free from thermal impact cracking and excellent in plasma resistance characteristic can be provided.

COPYRIGHT: (C)1997.JPO

CLIPPEDIMAGE= JP363285941A

PAT-NO: JP363285941A

DOCUMENT-IDENTIFIER: JP 63285941 A

TITLE: ELECTRONIC CIRCUIT SUBSTRATE, MANUFACTURE OF SAID SUBSTRATE AND ELECTRONIC CIRCUIT DEVICE

PUBN-DATE: November 22, 1988

INVENTOR-INFORMATION:

NAME

OGINOYA, MITSUO

KOJIMA, YOSHIYUKI

NAKAJIMA, SHOICHI

FUKUSHIMA, MASATAKE

ASAHI, NAOTATSU

ASSIGNEE-INFORMATION:

NAME

COUNTRY

HITACHI LTD

N/A

HITACHI POWDERED METALS CO LTD

N/A

APPL-NO: JP62121593

APPL-DATE: May 19, 1987

INT-CL_(IPC): H01L021/52; H05K001/05

US-CL-CURRENT: 257/655

ABSTRACT:

PURPOSE: To improve heat-dissipating characteristics by respectively giving the joint surfaces of an electrical insulating layer and a high **thermal conductive substrate concentration gradients in which concentration** is reduced toward the member sides of the other parties.

CONSTITUTION: The thin layer of an electrical insulating layer is formed directly onto a high thermal conductive substrate, and the electrical insulating layer is bonded by a mixed layer with the material of the high thermal conductive substrate. The electrical insulating layer is shaped by combining the formation of an evaporating layer through the evaporation method or sputtering method of a metal and the implantation of reactive ion species shaping the electrical insulating layer by a reaction with the evaporating layer of nitrogen ions or oxygen ions or the like. When a metallic layer is formed onto the electrical insulating layer, an inert gas such as argon gas, helium gas, nitrogen gas or the like as nonreactive ion species not reacted with a metallic-layer forming metal is used. Accordingly, each boundary of the electrical insulating layer on the high thermal conductive substrate shaped and the metallic layer on the electrical insulating layer is not made distinct, and both layers have concentration gradients and are made dense, thus acquiring an electrical circuit substrate having excellent adhesion and electrical insulating properties and small thermal resistance.

COPYRIGHT: (C)1988.JPO&Japio